

Fig.1

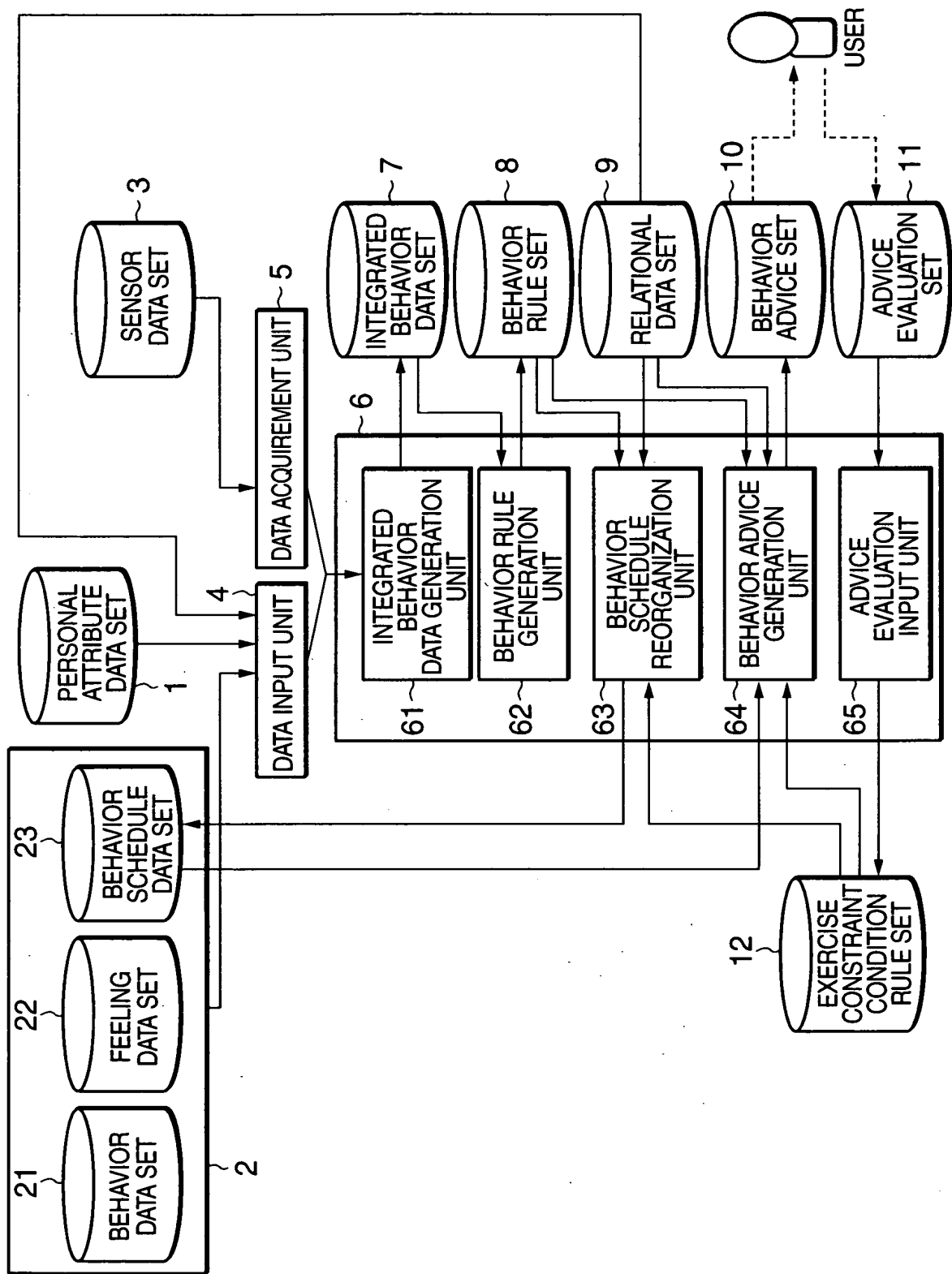


Fig.2

PERSONAL ATTRIBUTE DATA SET						
NO.	USER NAME	NAME	AGE	OCCUPATION	ADDRESS	PLACE OF WORK PASSWORD
1	taro	TARO DENKI	45	SE	B, A TOWN, MIYAMAE-KU KAWASAKI-CITY	C, TAMA-KU KAWASAKI-CITY * * * *
2	hanako	HANAKO DENKI	38	BUSINESS	B, A TOWN, MIYAMAE-KU KAWASAKI-CITY	D, NAKA-KU KAWASAKI-CITY * * * *

Fig.3

<u>BEHAVIOR DATA SET</u>							
<u>NO.</u>	<u>DATE</u>	<u>START TIME</u>	<u>END TIME</u>	<u>FROM</u>	<u>TO</u>	<u>USER</u>	<u>BEHAVIOR LABEL</u>
1	2002/12/6	7:55	9:07	<u>HOME</u>	<u>PLACE OF WORK</u>	<u>taro</u>	<u>ATTENDANCE</u> <u>USUAL COMMUTATION</u>
2	2002/12/6	21:56	22:50	<u>PLACE OF WORK</u>	<u>THE THIRD STORE</u>	<u>taro</u>	<u>LEAVING</u> <u>SHOPPING COMMUTATION</u>
3	2002/12/6	N/A	23:15	<u>THE THIRD STORE</u>	<u>HOME</u>	<u>taro</u>	

Fig.4

FEELING DATA SET					
NO.	DATE	START TIME	END TIME	USER	FEELING DESCRIPTION
1	2002/12/6	7:55	9:07	<u>taro</u>	GOOD It is cloudy, but I feel good.
2	2002/12/6	21:56	23:15	<u>taro</u>	SUPREME I got what I wanted. Furthermore, I exercised by walking. It was a good change of air.

Fig.5

<u>BEHAVIOR SCHEDULE DATA SET</u>								
NO.	DATE	START TIME	END TIME	FROM	TO	USER	BEHAVIOR LABEL	ROUTE SHCHEDULE
1	2002/12/6	7:30	8:30	<u>HOME</u>	<u>PLACE OF WORK</u>	<u>taro</u>	<u>ATTENDANCE</u>	<u>USUAL COMMUTATION</u>
2	2002/12/6	21:30	22:30	<u>PLACE OF WORK</u>	<u>HOME</u>	<u>taro</u>	<u>LEAVING</u>	<u>SHOPPING COMMUTATION</u>

Fig.6

SENSOR DATA SET						
NO.	DATE	START TIME	END TIME	SENSOR A MEASUREMENT VALUE FROM	SENSOR A MEASUREMENT VALUE TO	
1	2002/12/6	7:55	9:07	0	1548	
2	2002/12/6	21:56	22:50	4732	5643	
3	2002/12/6	N/A	23:15	N/A	7893	

Fig.7

INTEGRATED BEHAVIOR DATA SET												
NO.	DATE	START TIME	END TIME	ROUTE	USER	BEHAVIOR LABEL	NECESSARY TIME	DELAY START TIME	NECESSARY EXTENSION TIME	NUMBER OF STEPS	ACCUMULATED NUMBER OF STEPS	FEELING DESCRIPTION
1	2002/12/6	7:55	9:07	<u>NORMAL COMMUTATION</u>	<u>taro</u>	<u>ATTENDANCE</u>	01h12m	00h25m	00h12m	1548	1548	GOOD It is cloudy, but I feel good.
2	2002/12/6	9:07	12:21	<u>PRIVATE ROOM</u>	<u>taro</u>	<u>AM BUSINESS</u>	03h14m	00h37m	-00h36m	236	1784	
3	2002/12/6	12:21	13:08	<u>LUNCH PATH1</u>	<u>taro</u>	<u>LUNCH</u>	00h47m	00h01m	00h07m	955	2739	
4	2002/12/6	13:08	17:01	<u>PRIVATE ROOM</u>	<u>taro</u>	<u>PM BUSINESS1</u>	03h53m	00h08m	-00h07m	196	2935	UNWELL I feel unwell with restricted exercise.
5	2002/12/6	17:01	17:51	<u>LIBRARY PATH1</u>	<u>taro</u>	<u>INSPECTION</u>	00h50m	00h01m	-00h10m	881	3816	
6	2002/12/6	17:51	19:03	<u>PRIVATE ROOM</u>	<u>taro</u>	<u>PM BUSINESS2</u>	01h12m	-00h09m	00h12m	111	3927	
7	2002/12/6	19:03	19:51	<u>DINING PATH1</u>	<u>taro</u>	<u>DINING</u>	00h48m	00h03m	-00h12m	515	4442	
8	2002/12/6	19:51	21:56	<u>PRIVATE ROOM</u>	<u>taro</u>	<u>NIGHT BUSINESS</u>	02h05m	-00h09m	00h35m	290	4732	
9	2002/12/6	21:56	23:15	<u>SHOPPING COMMUTATION</u>	<u>taro</u>	<u>LEAVING</u>	01h19m	00h26m	00h19m	3161	7893	SUPREME It got what I wanted. Furthermore, I exercised by walking. It was a good change of air.

Fig.8



BEHAVIOR RULE:

1. WEATHER : EXCEPT FOR RAIN
2. ATTENDANCE BY 9: 07
3. LEAVING BY 21: 56
4. DAY WHEN FEELING IS NOT UNWELL DURING WORKING



1. GO SHOPPING ON THE WAY BACK FROM THE OFFICE  
EVERY SECOND DAY
2. NUMBER OF STEPS : OVER 7000
3. FEELING IS GOOD  
(REAPPEARANCE RATIO : 100%)

Fig.9

CONCEPT DICTIONARY DATA SET

NO.	HIGH LEVEL CONCEPT	LOW LEVEL CONCEPT	TEXTUAL REPRESENTATION	CONDITION
1	holiday	usual holiday	usual holiday	
2	holiday	public holiday	public holiday	
3	holiday	salaried holiday	salaried holiday	
4	usual business	AM business	AM business n	n:natural number
5	usual business	PM business	PM business n	n:natural number
6	usual business	search	inspection	
7	usual business	meeting	s meeting	s:arbitrary string characters
8	overtime business	overtime work	night business n	n:natural number
9	overtime business	overtime work	midnight business n	n:natural number
10	rest	meal	lunch	
11	rest	meal	dinner	
12	rest	PM rest	PM rest n	n:natural number
13	place of work	company	private room	
14	place of work	company	the n-th council room	n:natural number
15	place of work	company	the n-th dining room	n:natural number
16	place of work	company	private room	
17	store	restaurant	the n-th dining room	
18	store	grocery store	the n-th store	n:natural number
19	commutation	attendance	attendance	
20	commutation	leaving	leaving	
21	commutation route	usual commutation route	usual commutation going route	
22	commutation route	usual commutation route	usual commutation returning route	
23	commutation route	shopping commutation route	shopping commutation going route	
24	commutation route	shopping commutation route	shopping commutation returning route	
25	business working route	conference route 1	conference going route 1	
26	business working route	conference route 1	conference returning route 1	
27	business working route	lunch route 1	lunch going route 1	
28	business working route	lunch route 1	lunch returning route 1	
29	business working route	dinner route 1	dinner going route 1	
30	business working route	dinner route 1	dinner returning route 1	
31	business working route	library route 1	library going route 1	
32	business working route	library route 1	library returning route 1	
33	business working route		circumference routes of private room	

Fig.10

# BEHAVIOR LABEL SET

NO.	BEHAVIOR LABEL	FROM	TO	CONDITION
1	attendance	home	place of work	
2	leaving	place of work	home	
3	lunch	private room the third dining room	the third dining room private room	11:00<time<14:00
4	inspection	private room library	library private room	
5	dinner	private room the first dining room	the first dining room private room	18:30<time<20:30
6	shopping in the middle of work	private room store	store private room	
7	AM business			7:00<time<12:30 except for above rules
8	PM business			13:00<time<19:50 except for above rules
9	night business			19:50<time<23:30 except for above rules

Fig.11

CALENDER WEATHER DATA SET

DATA NO.	DATA	WEEK DAY	USUAL HOLIDAY	PUBLIC HOLIDAY	SALARIED HOLIDAY	THE X-TH WEEK	WEATHER (DAYTIME)	WEATHER (NIGHTTIME)	AVERAGE TEMPERATURE(C)	AVERAGE HUMIDITY
1	2002/12/1	SUN.	YES	YES	NO	1	RAIN	RAIN	9.9	77
2	2002/12/2	MON.	NO	NO	NO	1	FINE	CLOUDY	10.3	68
3	2002/12/3	TUE.	NO	NO	NO	1	FINE	CLOUDY	10.3	65
4	2002/12/4	WED.	NO	NO	NO	1	RAIN	FINE	9.3	81
5	2002/12/5	THUR.	NO	NO	NO	1	CLOUDY	CLOUDY	13.4	72
6	2002/12/6	FRI.	NO	NO	NO	1	CLOUDY	CLOUDY	11.7	51
7	2002/12/7	SAT.	YES	YES	NO	1	RAIN	RAIN	6.4	76
8	2002/12/8	SUN.	YES	YES	NO	2	RAIN	RAIN	5.8	73
9	2002/12/9	MON.	NO	NO	NO	2	SNOW	SNOW	1.3	89
10	2002/12/10	TUE.	NO	NO	NO	2	RAIN	FINE	4.2	76

Fig.12

# ROUTE DATA SET

NO.	ROUTE LABEL	MAP	FROM	TO	ROUTE	POINT LIST
1	usual commutation going route	<u>A</u>	<u>y1</u>	<u>t1</u>	<u>1</u>	[ <u>y1</u> , <u>sa1</u> , <u>sb</u> , <u>t1</u> ]
	usual commutation. returning route	<u>A</u>	<u>t1</u>	<u>y1</u>	<u>2</u>	[ <u>t1</u> , <u>sb</u> , <u>sa1</u> , <u>y1</u> ]
2	shopping commutation going route	<u>A</u>	<u>y1</u>	<u>t1</u>	<u>1</u>	[ <u>y1</u> , <u>s1</u> , <u>sa1</u> , <u>sb</u> , <u>t1</u> ]
	shopping commutation returning route	<u>A</u>	<u>t1</u>	<u>y1</u>	<u>2</u>	[ <u>t1</u> , <u>sb</u> , <u>sa1</u> , <u>s1</u> , <u>y1</u> ]
3	conference going route 1	<u>B</u>	<u>md</u>	<u>r1</u>	<u>1</u>	[ <u>md</u> , <u>r1</u> ]
	conference returning route 1	<u>B</u>	<u>r1</u>	<u>md</u>	<u>1</u>	[ <u>r1</u> , <u>md</u> ]
4	lunch going route 1	<u>B</u>	<u>md</u>	<u>d1</u>	<u>2</u>	[ <u>md</u> , <u>d1</u> ]
	lunch returning route 1	<u>B</u>	<u>d1</u>	<u>md</u>	<u>2</u>	[ <u>d1</u> , <u>md</u> ]
5	dinner going route 1	<u>B</u>	<u>md</u>	<u>d2</u>	<u>3</u>	[ <u>md</u> , <u>d2</u> ]
	dinner returning route 1	<u>B</u>	<u>d2</u>	<u>md</u>	<u>3</u>	[ <u>d2</u> , <u>md</u> ]
6	library going route 1	<u>B</u>	<u>md</u>	<u>l1</u>	<u>4</u>	[ <u>md</u> , <u>l1</u> ]
	library returning route 1	<u>B</u>	<u>l1</u>	<u>md</u>	<u>4</u>	[ <u>l1</u> , <u>md</u> ]
7	circumference routes of private room	<u>B</u>	<u>md</u>			

Fig.13

# LOCATION DATA SET

NO.	MAP	POINT	NAME LABEL	LOCATION
1	A	y1	home	B street number, A town, Miyamae-ku, Kawasaki-city
2	A	s1	the third store	C street number, A town, Miyamae-ku, Kawasaki-city
3	A	sa	A station	D street number, A town, Miyamae-ku, Kawasaki-city
4	A	t1	place of work	D street number, C town, Saiwai-ku, Kawasaki-city
5	A	sb	B station	E street number, C town, Saiwai-ku, Kawasaki-city
6	B	md	private room	the first development building
7	B	r1	meeting room	the first development building
8	B	l1	library	the first development building
9	B	d1	the first dining room	the first development building
10	B	d2	the second dining room	the first development building

Fig.14

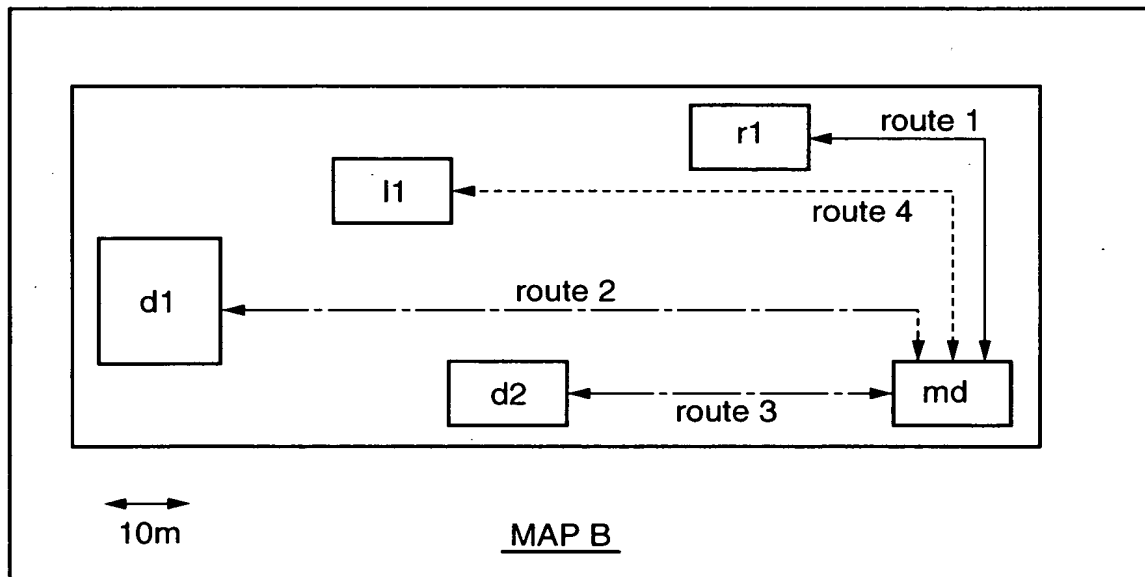
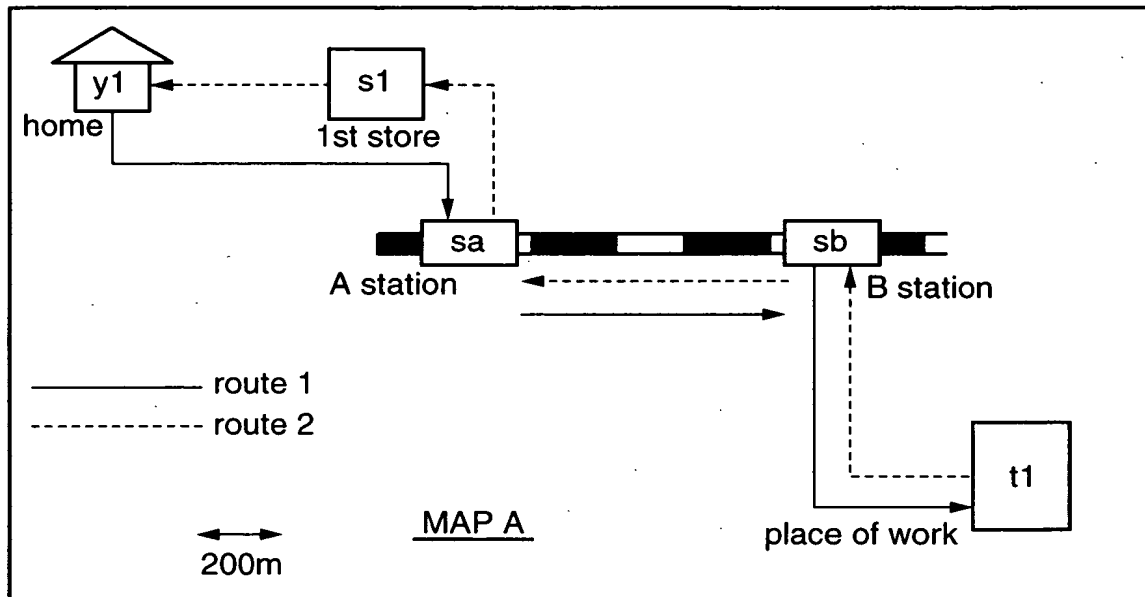


Fig.15

MAP RELATIONAL DATA SET			
NO.	MAP	POINT	DETAIL MAP
1	<u>A</u>	( <u>t1</u> )	<u>B</u>
2	<u>A</u>	( <u>y1</u> )	<u>C</u>
3	<u>A</u>	( <u>t1, y1</u> )	<u>D</u>
4	<u>B</u>	( <u>d1</u> )	<u>E</u>

Fig.16

ADVICE : Today, if you leave the office by 21:30 and go shopping, it is a good exercise for you and you will feel well.

ESTIMATED NUMBER OF STEPS : 8613

Fig.17



### EXERCISE CONSTRAINT CONDITION RULE

1. Weather except for rain
2. attendance by 9:07 and leaving by 21:26
3. no shopping yesterday
4. not unwell feeling during usual business



1. I went shopping on my way back from the office.
  2. above 7000 steps (8613 steps)
  3. feeling : supreme

ADVICE EVALUATION : A(good advice, I put it in action)

Fig.18

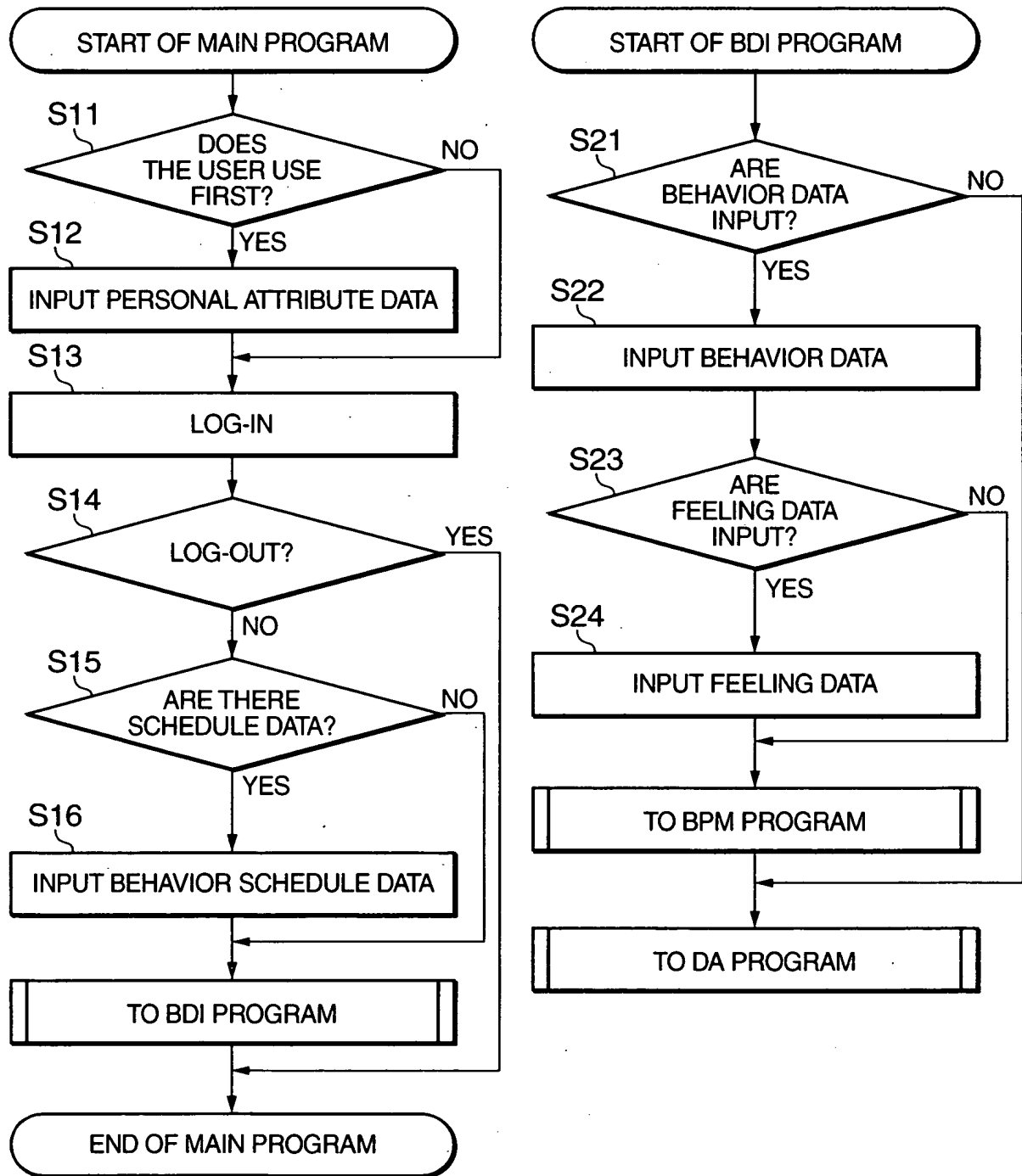


Fig.19A

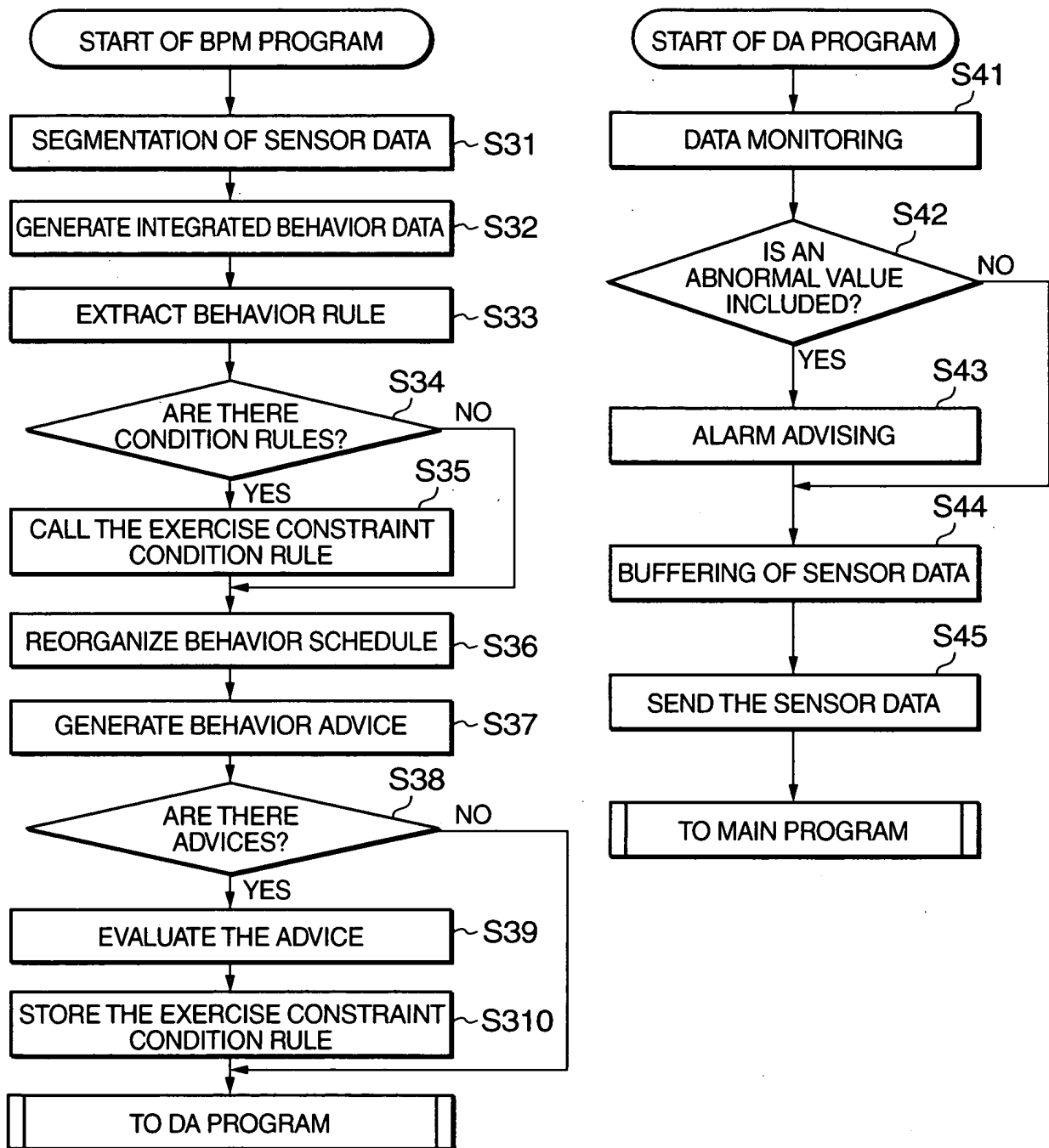


Fig.19B

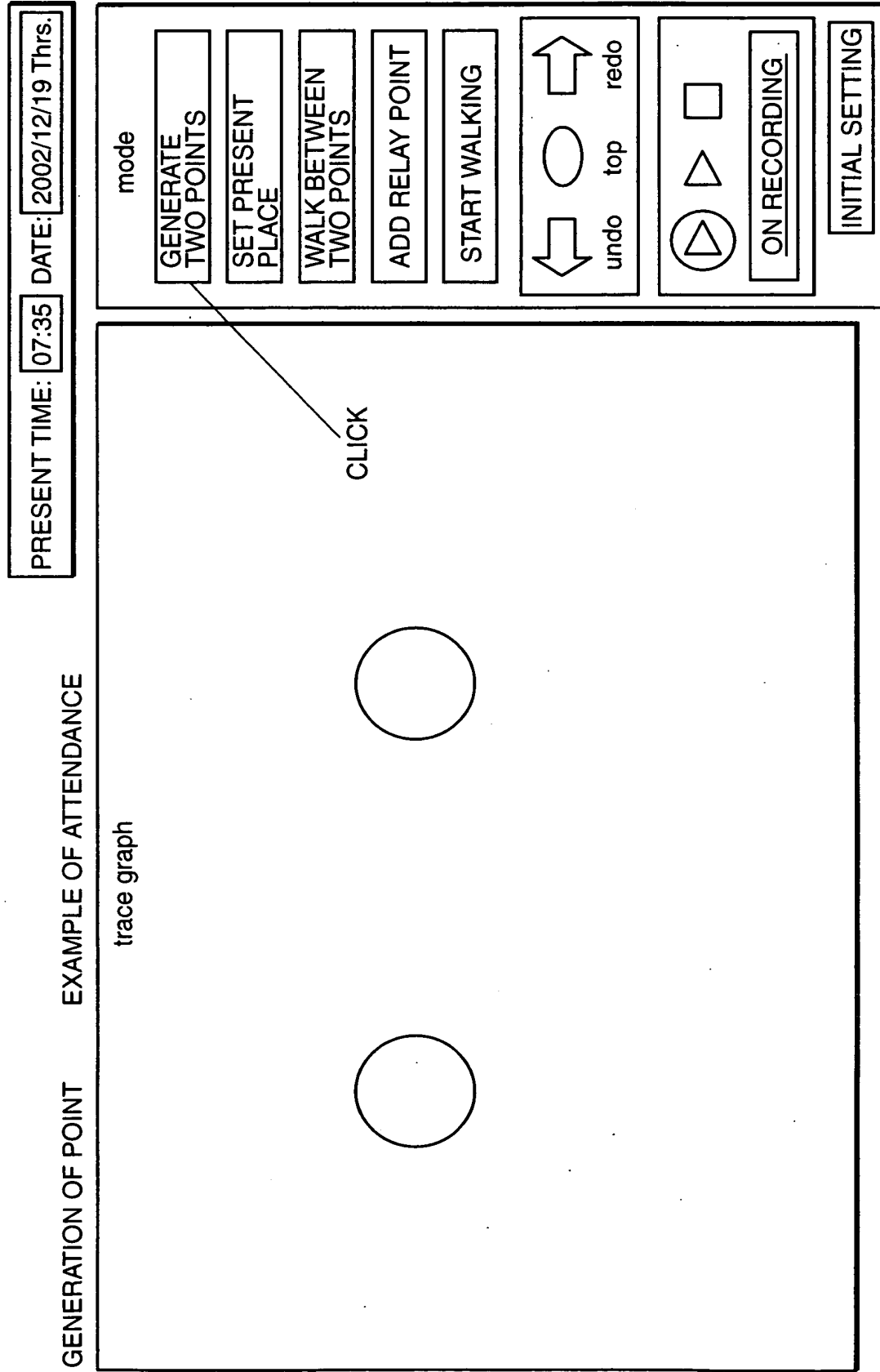


Fig.20

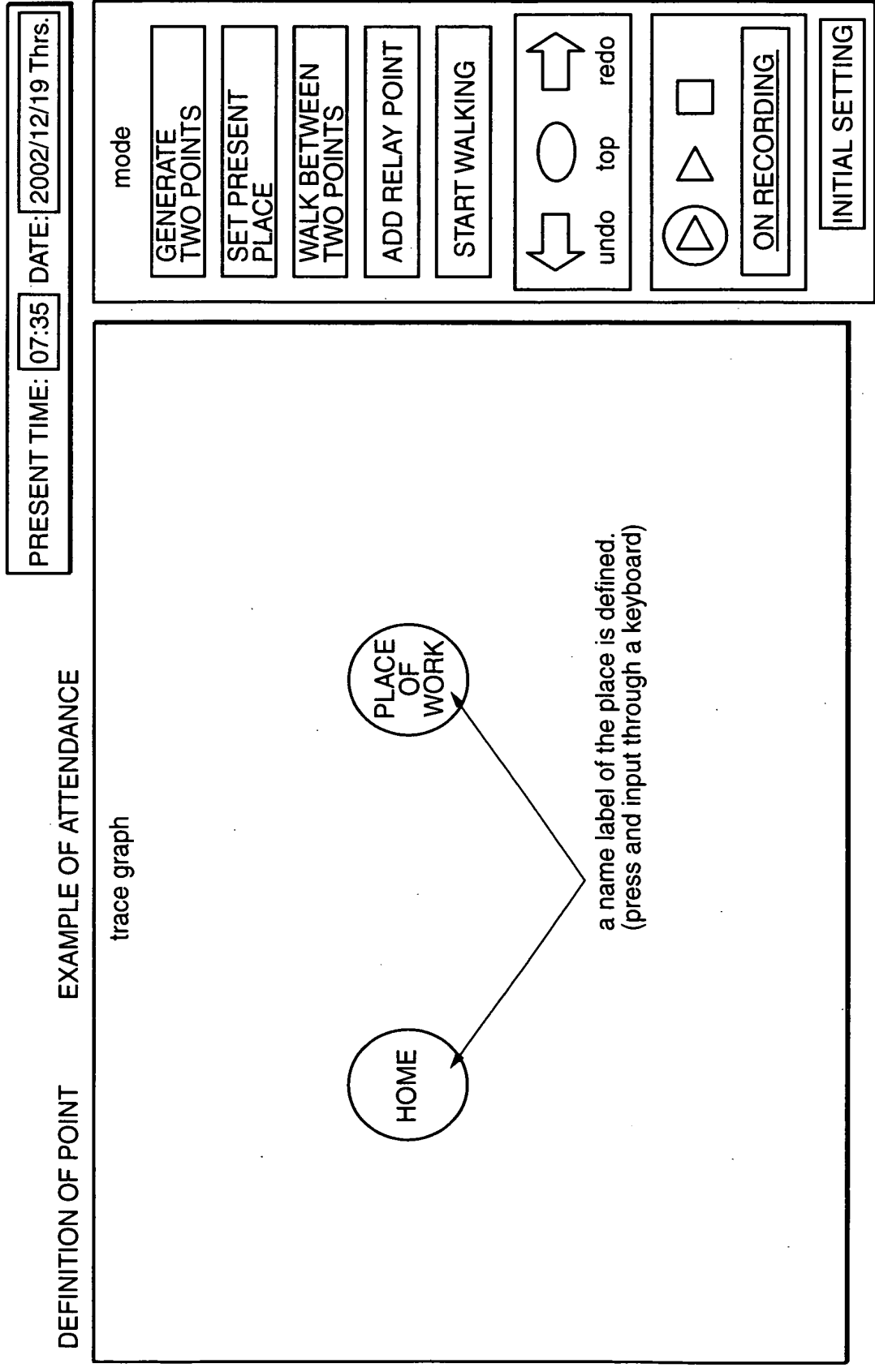


Fig.21

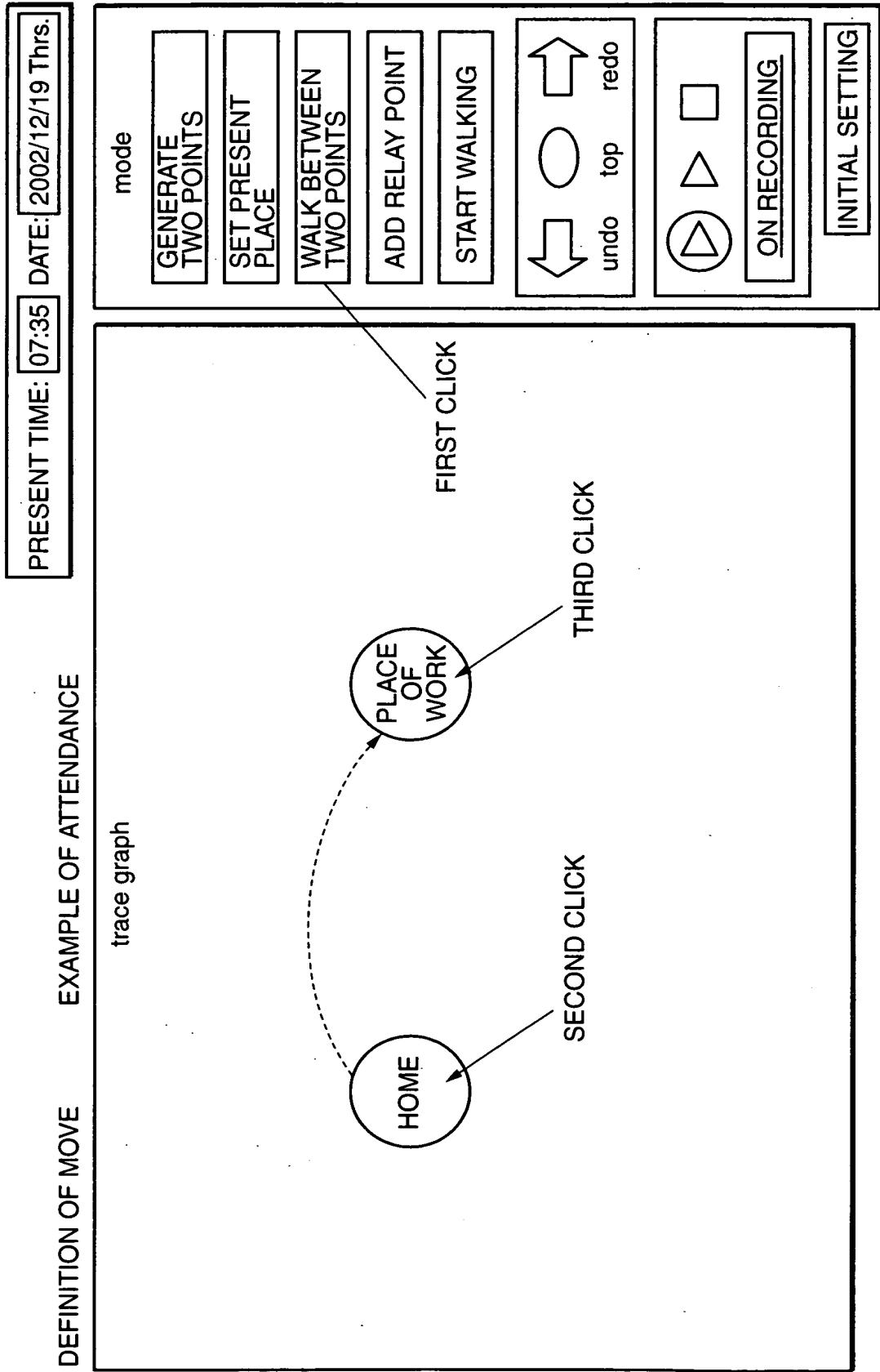


Fig.22

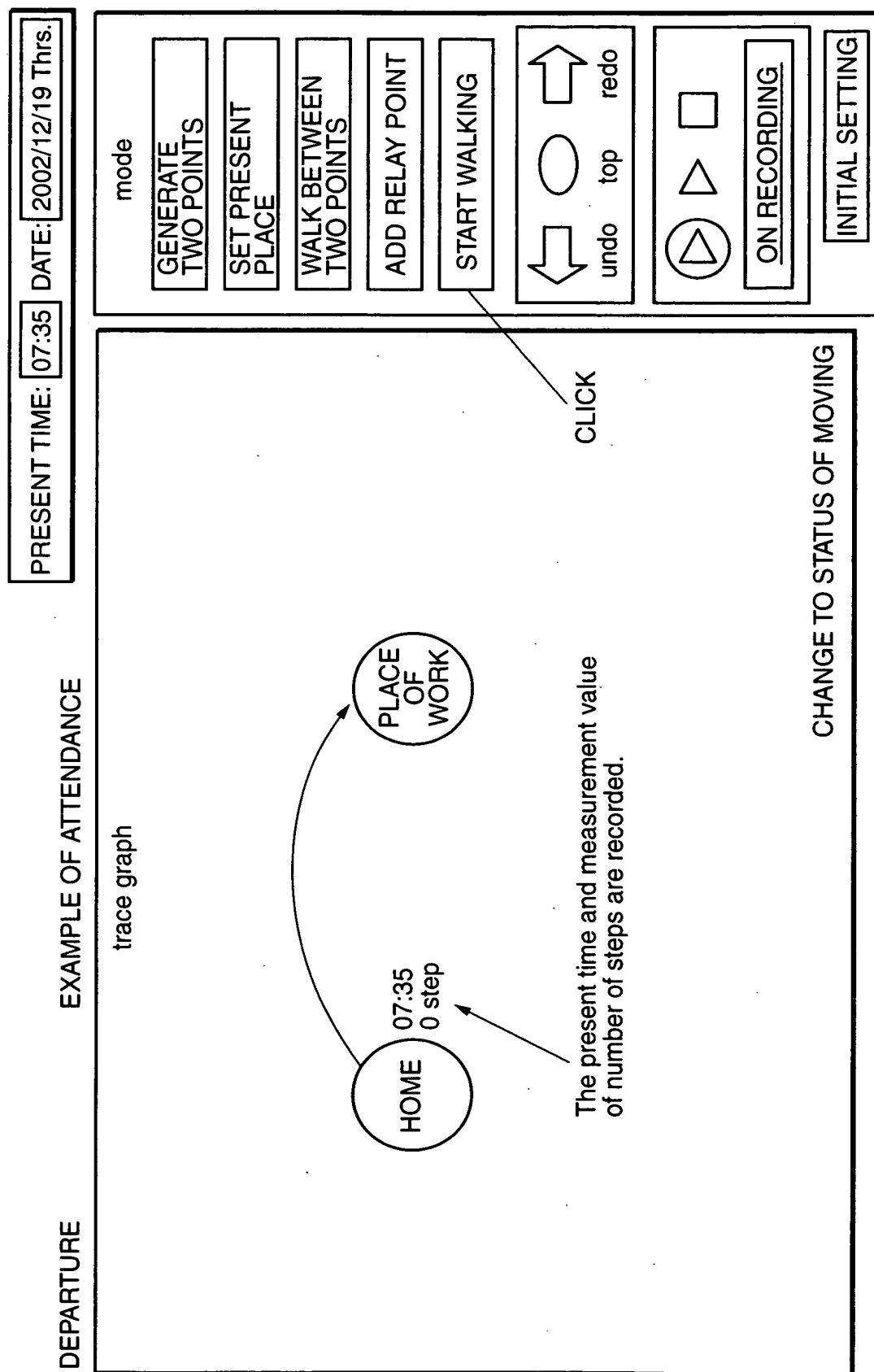


Fig.23

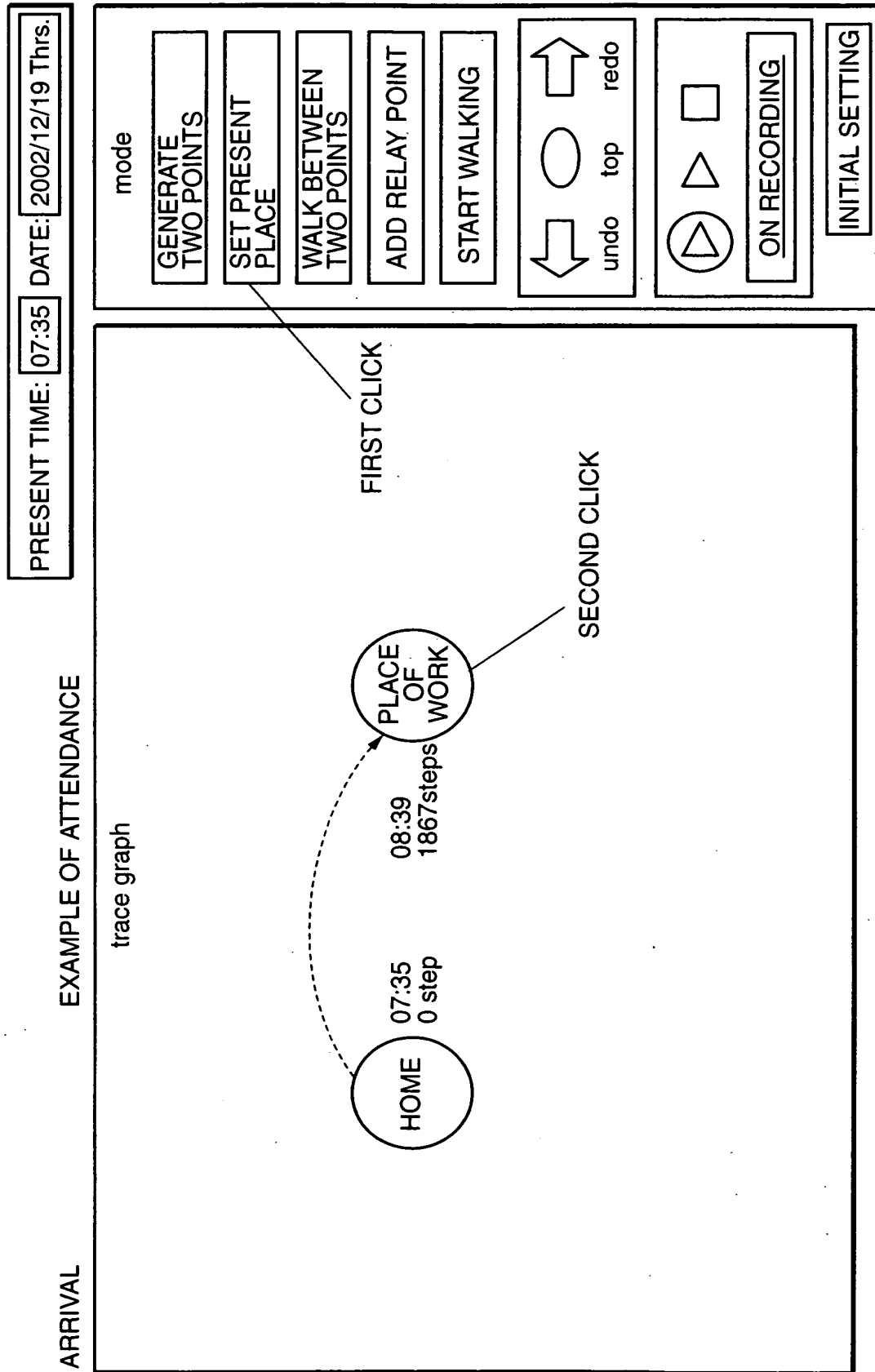


Fig.24



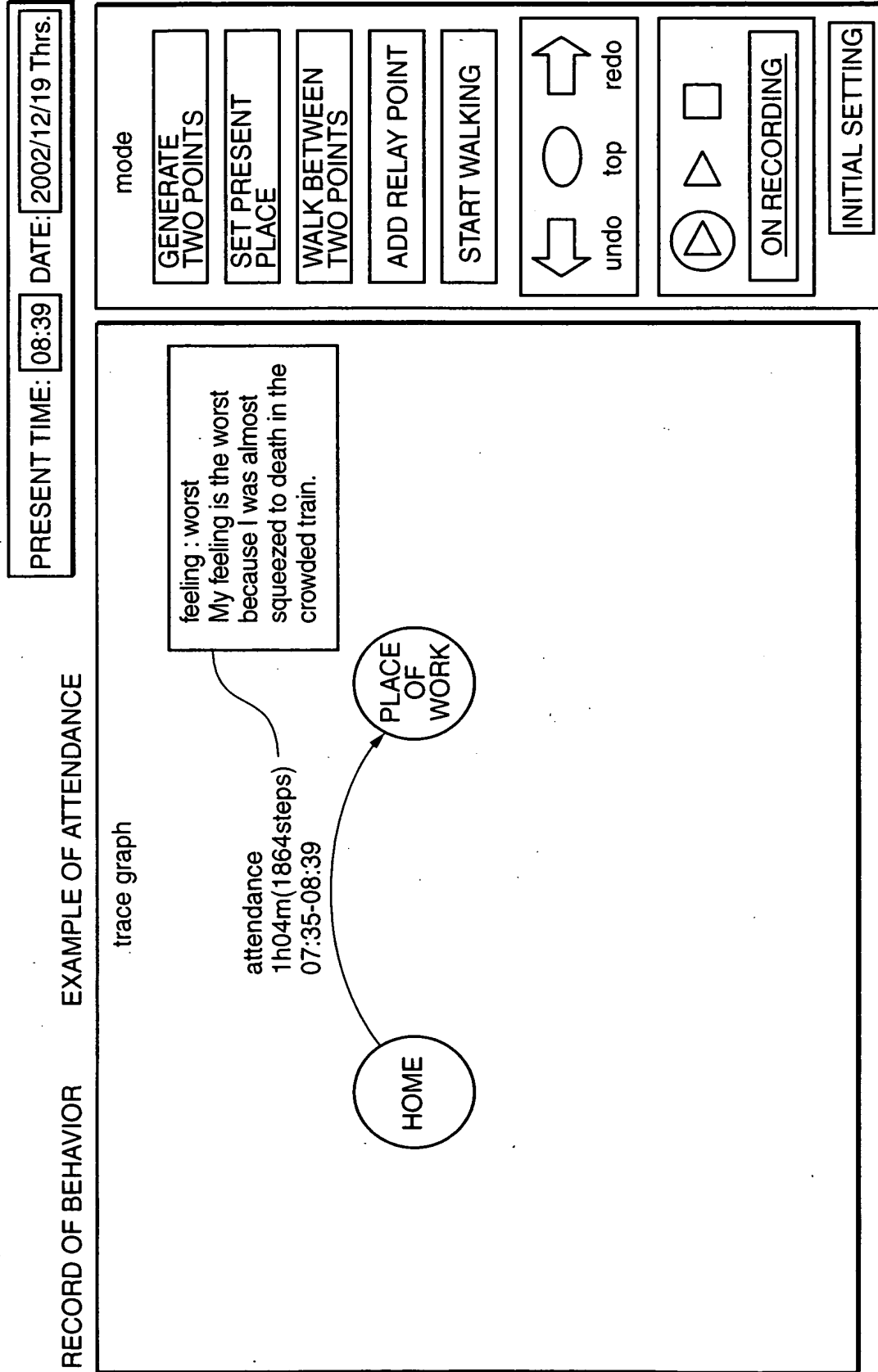


Fig.25

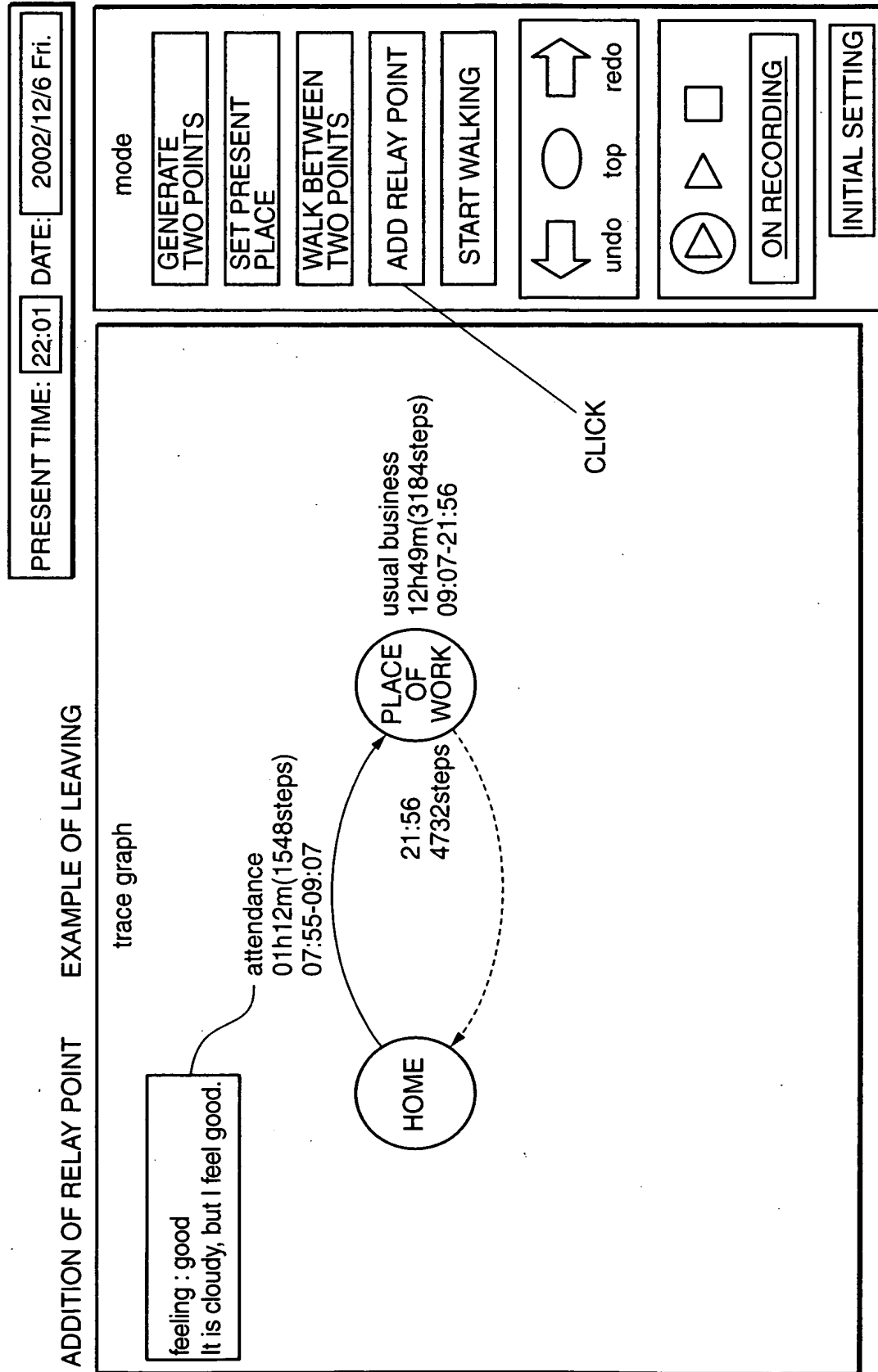


Fig.26

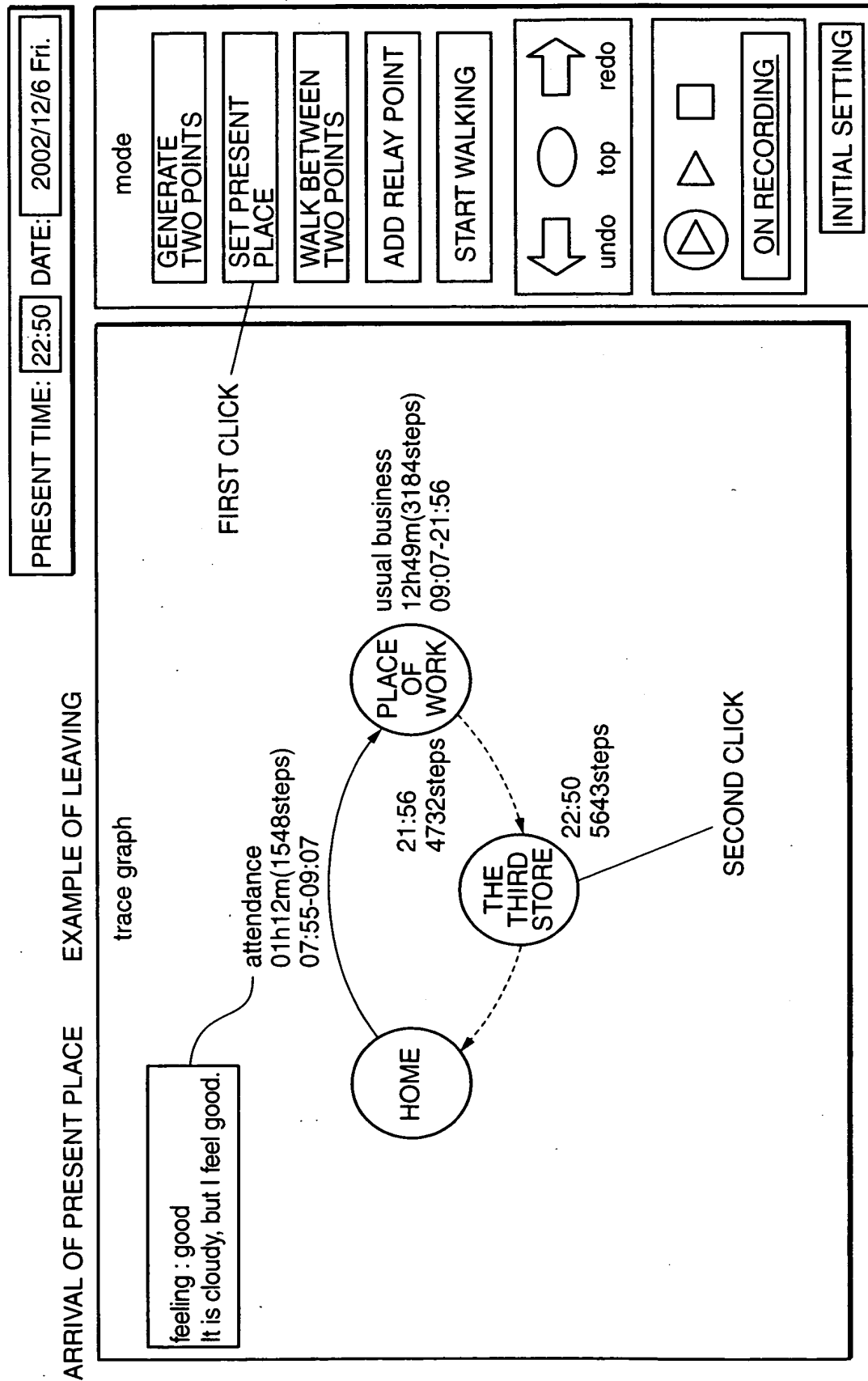


Fig.27

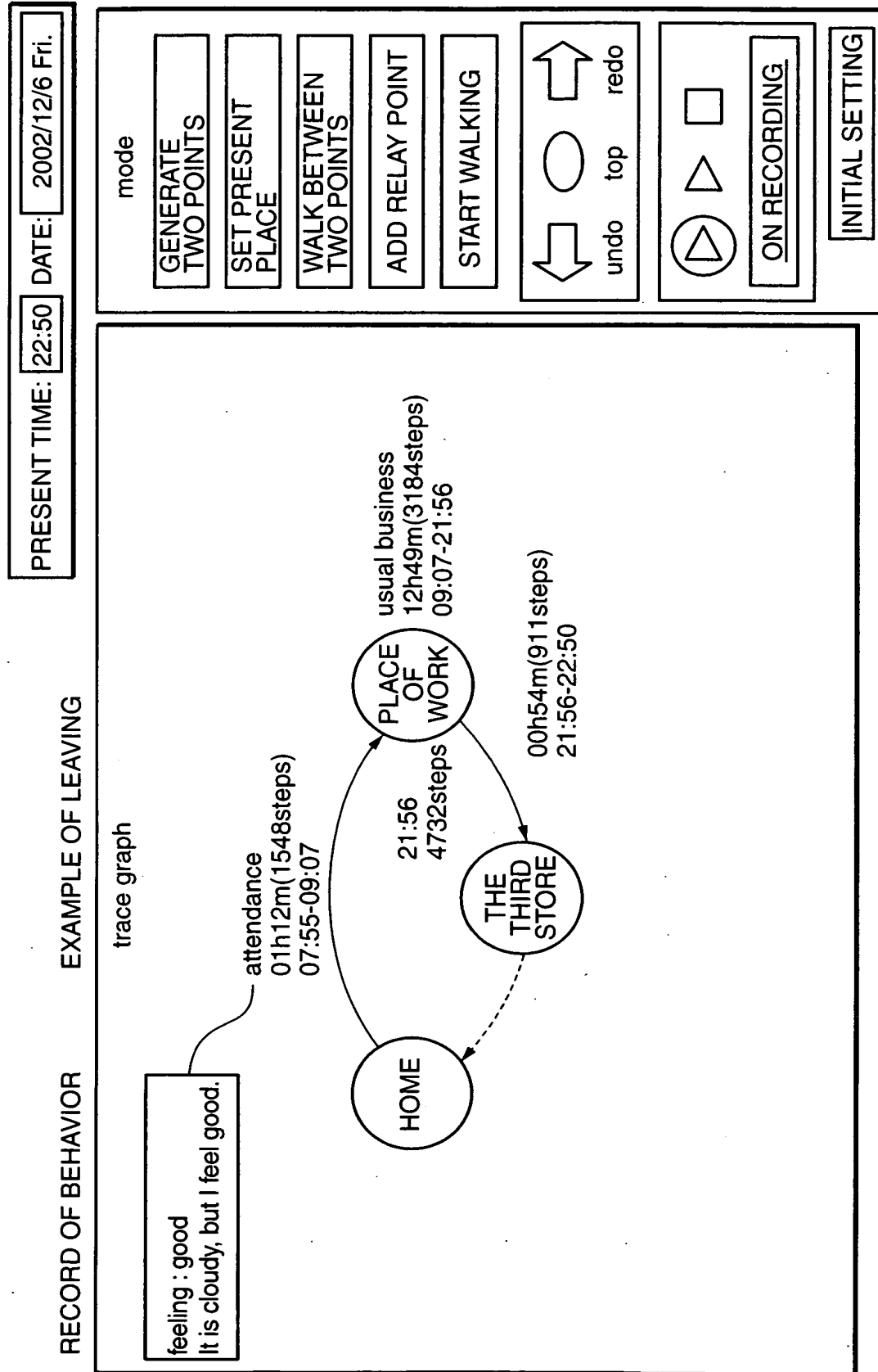


Fig.28

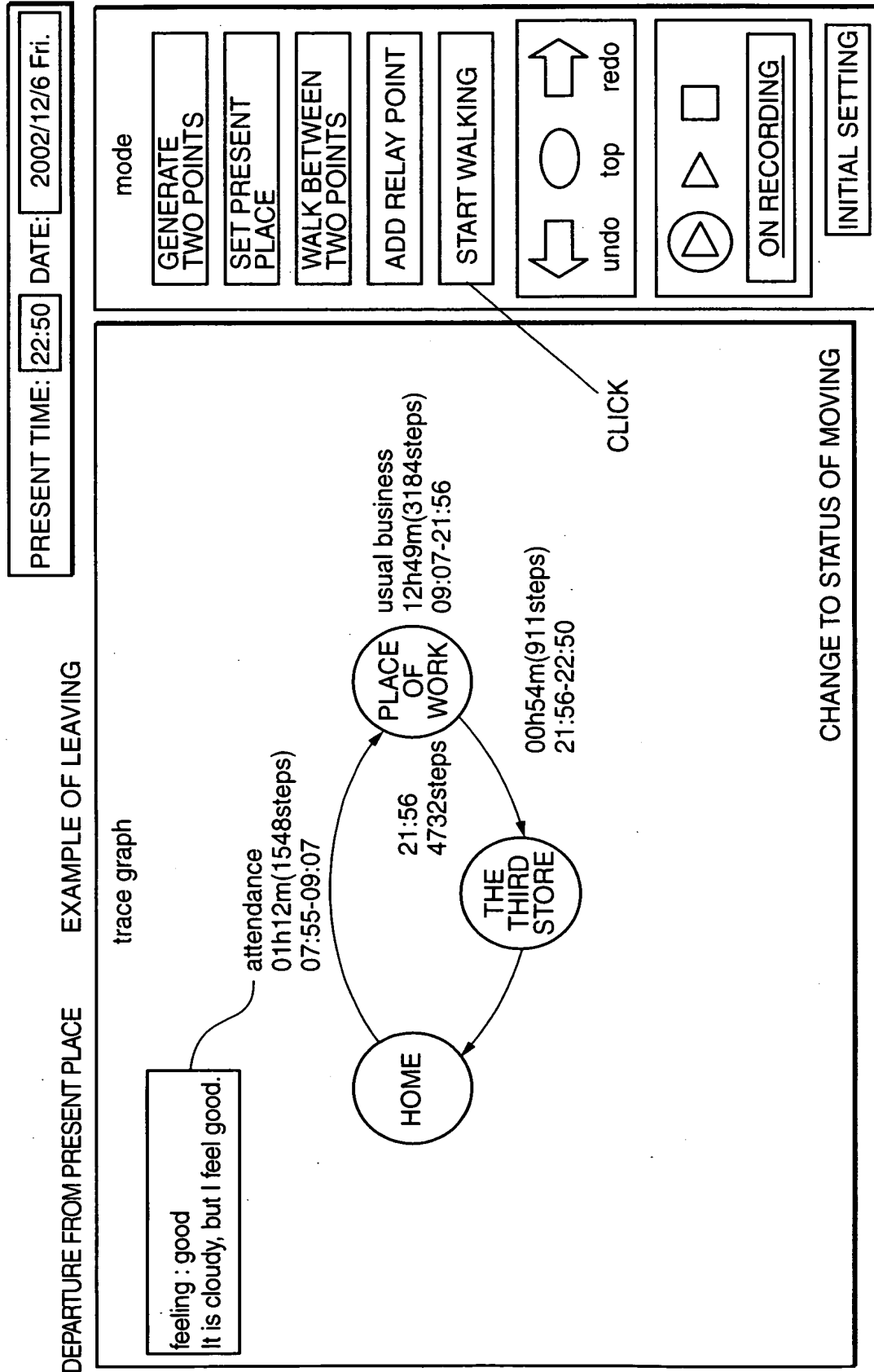


Fig.29

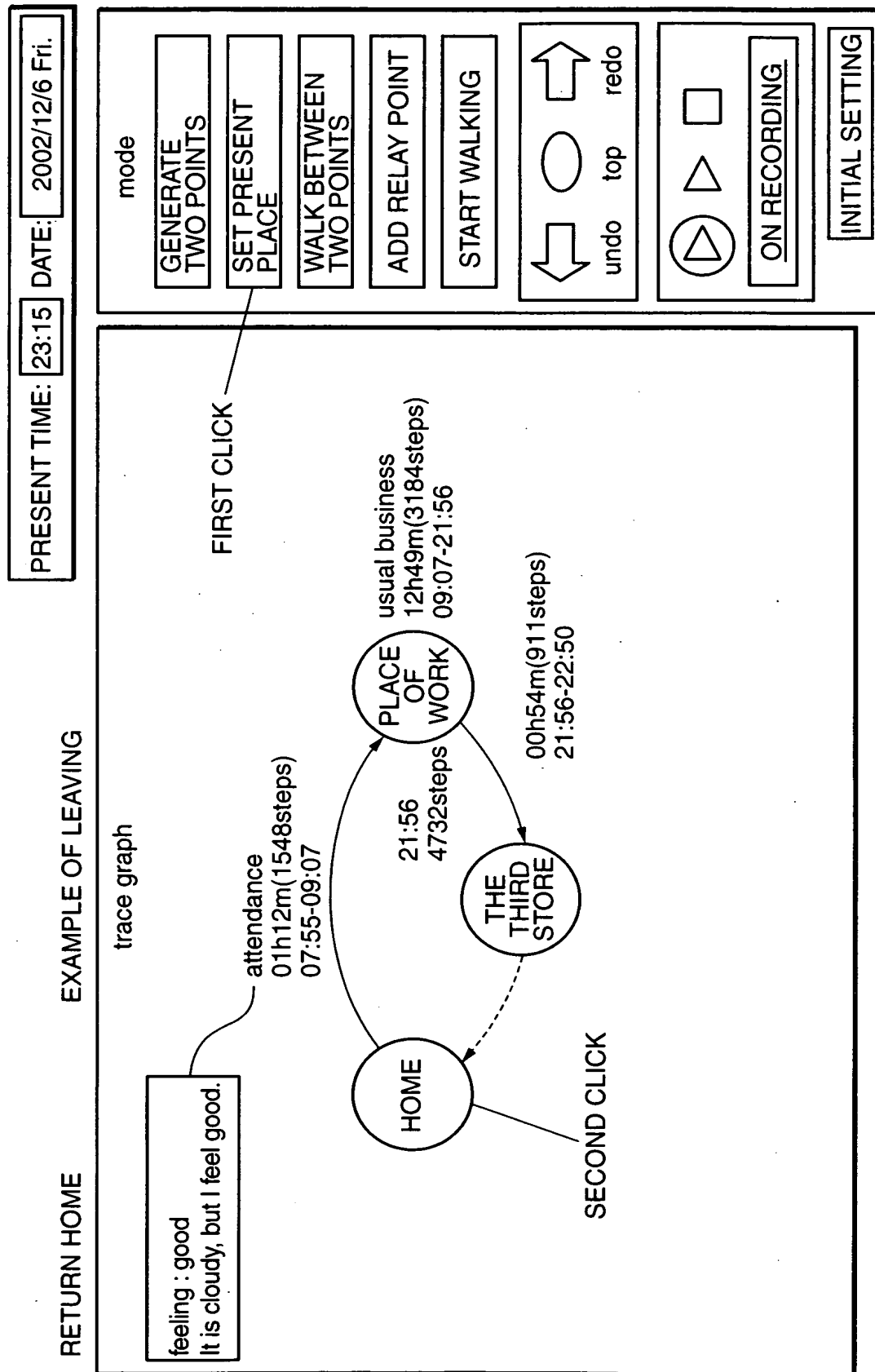


Fig.30

### BEHAVIOR SCHEDULE DATA SET

NO.	date	start time	end time	FROM	TO	user	behavior label	route schedule
1	2002/12/19	7:30	8:30	home	place of work	taro	attendance	usual commutation route

### BEHAVIOR DATA SET

NO.	date	start time	end time	FROM	TO	user	behavior label	route
1	2002/12/19	7:35	8:39	home	place of work	taro	attendance	usual commutation route

### FEELING DATA SET

NO.	date	start time	end time	user	feeling	feeling description
1	2002/12/19	7:35	8:39	taro	worst	My feeling is the worst because I was almost squeezed to death in the crowded train.

### SENSOR DATA SET

NO.	date	start time	end time	sensor A measurement value FROM	sensor A measurement value TO
1	2002/12/19	7:35	8:39	0	1867



### INTEGRATED BEHAVIOR DATA SET

NO.	date	start time	end time	route	user	behavior label	necessary time	start delay time	necessary extension time	accumulated number of steps	feeling	feeling description
1	2002/12/19	7:35	8:39	usual commutation route	taro	attendance	01h04m	00h05m	00h04m	1867	worst	My feeling is worst because I was squeezed to death in the crowded train.

Fig.31

SET SO THAT THE NUMBER OF STEPS IS CONSTANTLY ABOVE 7000 STEPS

If it is not rain on Dec.12 and the user did not go shopping the previous day, the schedule is reorganized to go to office by 9:07 and leave the office by 21:26.

(BEHAVIOR SCHEDULE OF DEC.12)  
BEHAVIOR SCHEDULE DATA SET

NO.	date	start time	end time	FROM	TO	user	behavior label	route schedule
1	2002/12/12	8:30	9:30	home	place of work	taro	attendance	usual commutation route
2	2002/12/12	9:30	22:00	private room		taro	usual business	circumference routes of private room
3	2002/12/12	22:30	23:00	place of work	home	taro	leaving	usual commutation route



(REORGANIZED BEHAVIOR SCHEDULE)  
BEHAVIOR SCHEDULE DATA SET

NO.	date	start time	end time	FROM	TO	user	behavior label	route schedule	estimated number of steps
1	2002/12/12	8:00	9:00	home	place of work	taro	attendance	usual commutation route	1657
2	2002/12/12	9:00	21:30	private room		taro	usual business	circumference routes of private room	3616
3	2002/12/12	21:30	22:00	place of work	home	taro	leaving	shopping commutation route	3340
(total)									8613

Fig.32



TOP

PRESENT TIME: 07:35 DATE: 2002/12/19 Thrs.

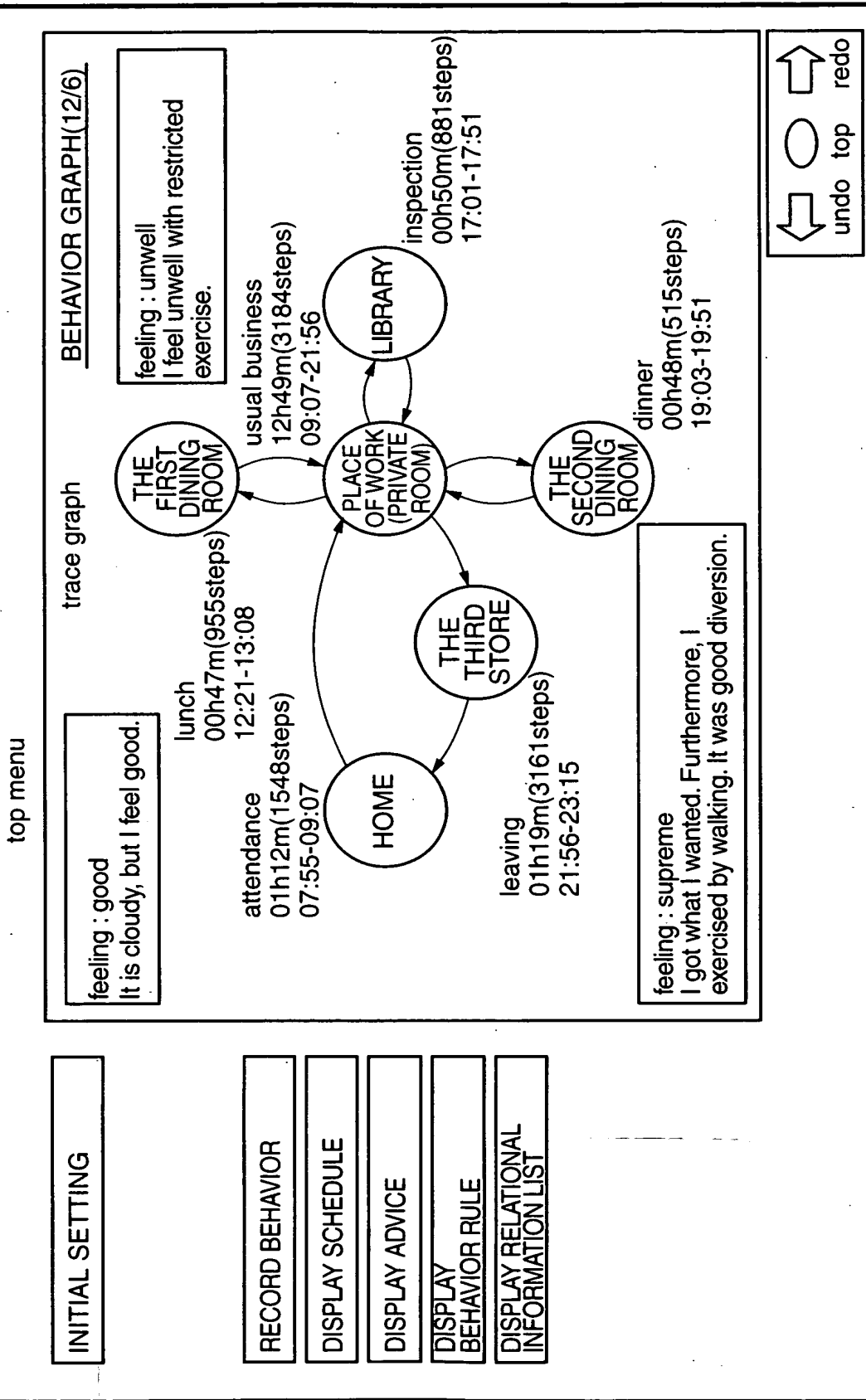


Fig.33

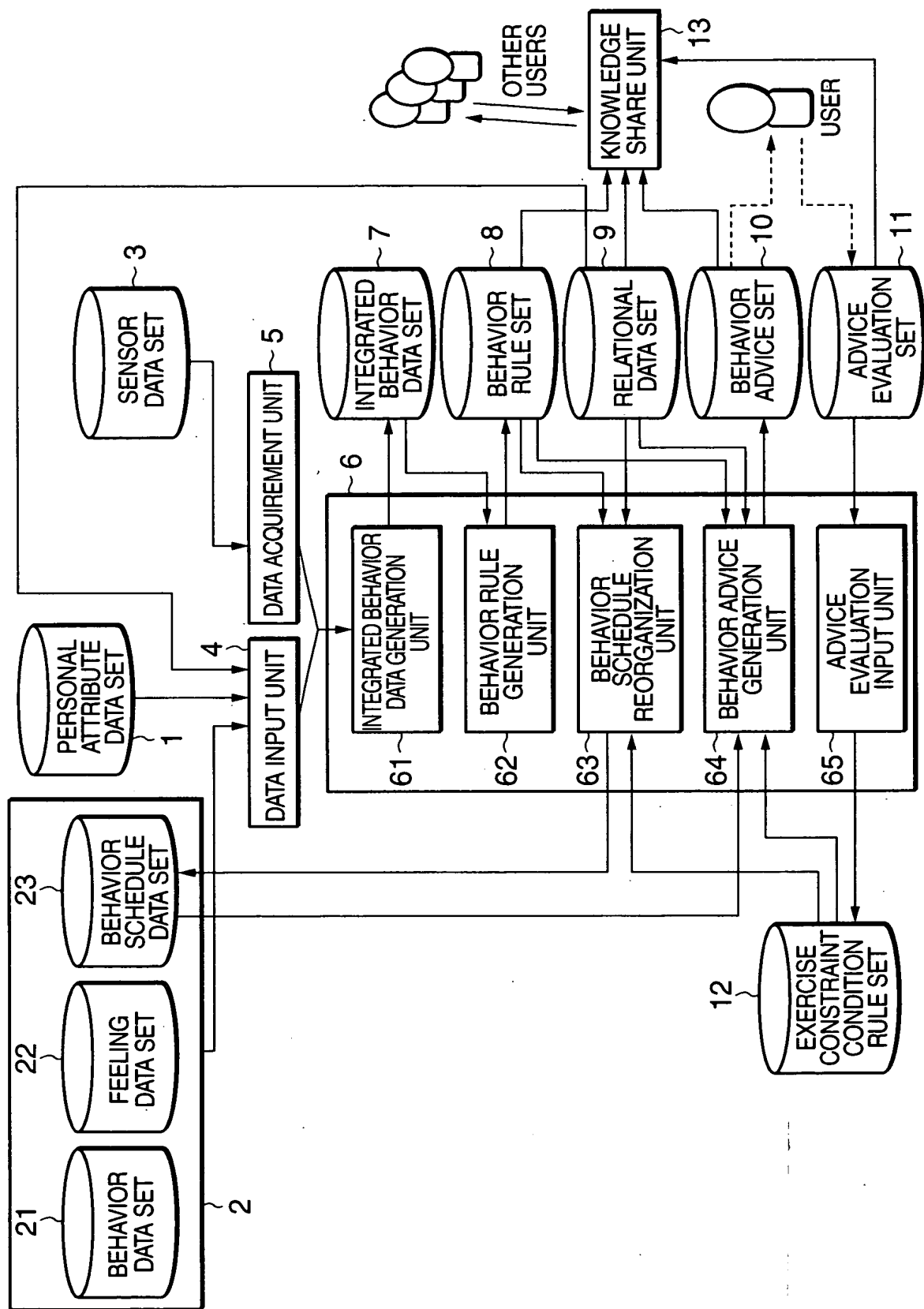


Fig.34

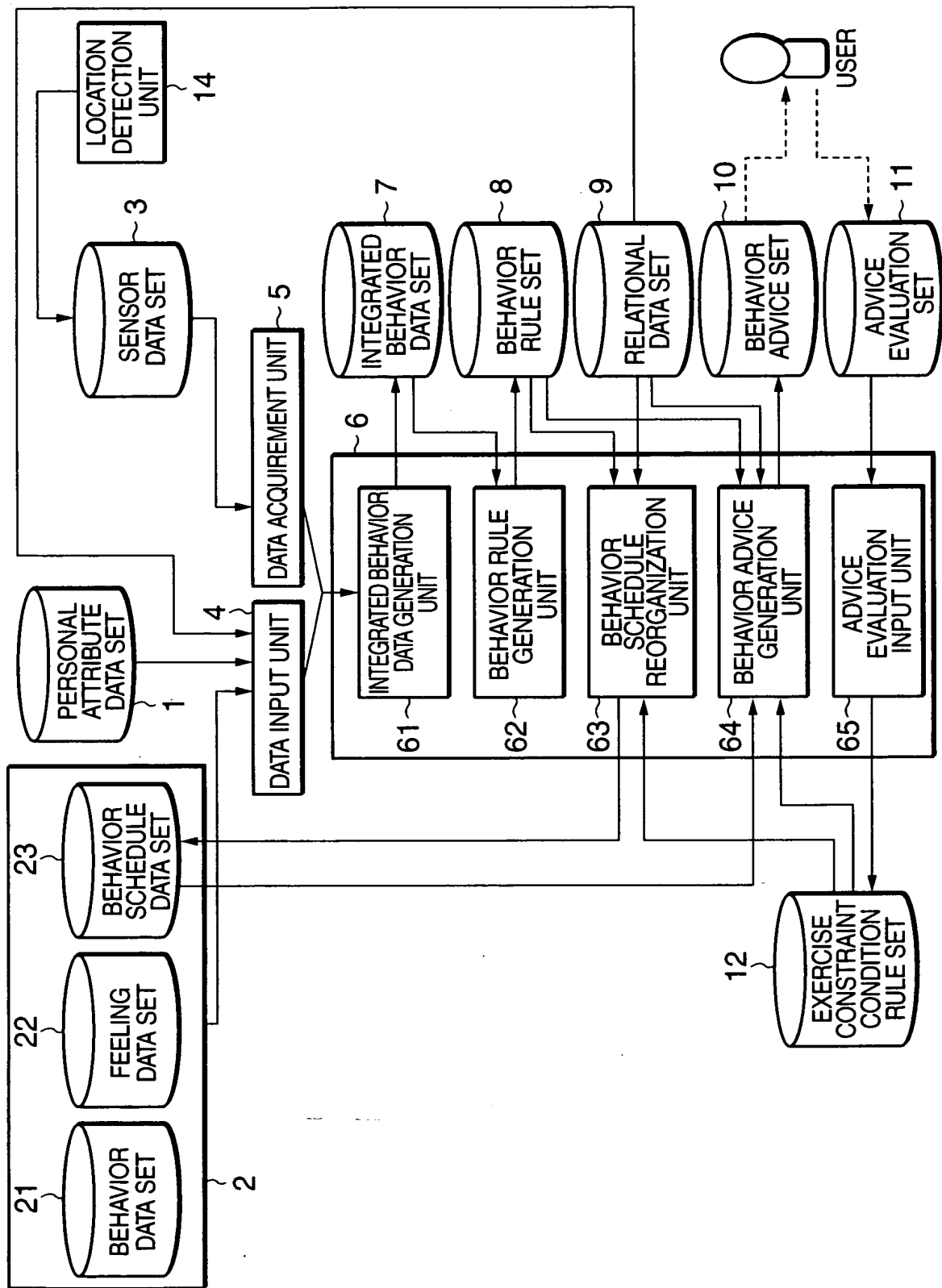


Fig.35